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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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01/27/2004

Roland Hengerer

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ACCENTURE CHICAGO 28164
BRINKS HOFER GILSON & LIONE
P O BOX 10395
CHICAGO, IL 60610

EXAMINER

DESTA, ELIAS

ART UNIT

PAPER NUMBER

2857

MAIL DATE

DELIVERY MODE

10/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/766,738

Applicant(s)

HENGERER, ROLAND

Examiner

Elias Desta

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/13/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-13 is/are rejected.
- 7) ☒ Claim(s) 2 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Pre-Appeal Decision

1. Applicant's arguments, see pre-appeal brief request for review, filed 4/13/2007, with respect to the rejection(s) of claims 1-14 under 35 U.S.C. 101 and 35 U.S.C. 112, first paragraph have been fully considered and are persuasive (per Pre-Appeal Decision). Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made for Claims 1 and 3-13 in view of Kita (SHIMADZU Article, 'Attempts at Simplified Measurement of Odors in Japan Using Odor Sensors'), Blixt et al. (IJOFM Article, 'Using an Electronic Nose for Determining the Spoilage of Vacuum Packaged Beef', hereon Blixt) and Tominaga et al. (F&F Journal, 'Identification of New Volatile Thiols in the Aroma of Vitis Vinifera L. Var. Sauvignon Blanc Wines', hereon Tominaga).

Drawing

2. The drawing is objected to because of the following minor informalities: Figs. 1 and 2 do not illustrate the claimed methods/inventions, for instance, claims 1, 8 and 10.

Explanation of Rejection

Claim rejection – 35 U.S.C. 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 9 and 13 are rejected under 35 U.S.C. 102(b) as anticipated by Tominaga et al.

(F&F Journal, "Identification of New Volatile Thiols in the Aroma of Vitis Vinifera L. Var.

Sauvignon Blac Wines', hereon Tominaga).

In reference to claim 9: Tominaga teaches a method of identifying wine aroma using volatile identification code (see Tominaga, page 159, reagents). In selective extraction of volatile Thiols from wine, Tominaga uses the reagents, such as pH corrected (to 8.5) Hydroxide solution and sodium p-hydroxy-mercuribenzoate solution. These two solutions after further process provide new volatile Thiols in specific type of wine, the summary (in page 161, table 1) provides the relative retention indices that provide or define the volatile identification code for a particular wine. As for spraying or applying these reagents, the purpose of the application is to make distinction or identify a particular flavor in a given wine species.

With regard to claim 13: Tominaga further teaches that sensing the volatile characteristics through relative intensities displayed through mass spectra which inherently provides sensors output that generate a distinctive signature [(abundance value, as noted in Fig. 1) or relative intensity as noted in Fig. 2)] that are associated with application of the volatile components or reagents on the object, in this case the wine sample.

Claim rejection – 35 U.S.C. 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-5, 8 and 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kita (SHIMADZU Article, 'Attempts at Simplified Measurement of Odors in Japan Using Odor Sensors') in view of Blixt et al. (IJOFM Article, 'Using an Electronic Nose for Determining the Spoilage of Vacuum Packaged Beef', hereon Blixt).

In reference to claims 1, 8 and 12: Kita teaches a method for determining a method that permits an identification of similarity of measured odor to a pre-measured odor (see Kita, page 145, second and third paragraphs). The method includes two measured vectors, light components and heavy components corresponds to sensor (A) and sensor (B) respectively. The length of the vectors (see Kita, page 145, Fig. 3 and the second paragraph) defines the sent strength (intensity). The decay rate constant during the measurement associated to each measurement is relative to the measurement of the odor and is inherent in the measurement process. The current scent ratio or odor quality (as noted in the second paragraph) is calculated as the angle (gradient) between the vectors, and displaying the result on a screen (the method includes a computerized multivariate analysis where a screen or monitor is an inherent feature of a computer) (see Kita, page 245, Fig. 4).

However, Kita does not teach calculating a method calculating an age of the object starting from a reference time for which the reference scent ratio, or odor quality of the scent strength or intensity has been registered.

Blixt teaches a method of using a electronic nose for determining the spoilage of vacuum-packaged food, such as beef where the degree of spoilage is calculated using a model based on two Tagushi sensors, correlated well with the degree of spoilage determined by the sensory panel (see Blixt, page 123, Abstract).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the two scent measurement sensor for a given object as taught by Kita and incorporate a method of determining the spoilage or age of an object (see Blixt, page 128, Table 3) as noted in Blixt, because the method allows the end user to develop a model for predicting the shelf life and freshness of a food substance, such as milk using a dynamic sensor data (see Blixt, pages 133-134, from the last paragraph in page 133 to the first paragraph in page 134).

With regard to claim 3: Kita in combination Blixt further teaches that calculating the age of the object is performed by comparing the scent ratio or odor quality to a pre-registered value because the method permits an approximate identification by evaluating the similarity of the measured odor to a pre-measured odor (see Kita, page 145, 3rd paragraph).

With regard to claim 4: Kita in combination Blixt further teaches that the reference scent ratio (gradient) is determined by measuring the first and second scent strengths at the initial time from which the age of the object is to be determined because as noted above, the evaluation is

done by carrying out the measured value to the pre-measured odor values (see Kita, page 145, 3rd paragraph).

With regard to claim 5: Kita in combination Blixt further teaches that the first and second decay constants are determined during a process of characterizing of sensors measuring the first and second scents because in the simplified method (see Kita, page 143, Table 1) the signal from the odor sensor permits on-site measurements and requires calibration for odor elements and decay rate constants are considered one of the odor elements.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita (SHIMADZU Article, 'Attempts at Simplified Measurement of Odors in Japan Using Odor Sensors') in view of Tominaga et al. (F&F Journal, 'Identification of New Volatile Thiols in the Aroma of Vitis Vinifera L. Var. Sauvignon Blac Wines', hereon Tominaga).

In reference to claims 6 and 7: Kita in combination Blixt further teaches that the reference scent ratio (gradient) is determined by measuring the first and second scent strengths (see Kita, page 145, 3rd paragraph).

However, Kita does not teach first sent is included in a first volatile compound sprayed on the object and the second scent is included in a second volatile compound sprayed on the object where the scent ratio is pre-registered and corresponds to the first and second scent strengths when the compound is sprayed or applied on the object.

Tominaga teaches identification of new volatile Thiols in the aroma of (or scent) by synthesizing a food substance, such as wine using reagents by selective extraction of volatile Thiols from wine (see Tominaga, page 159; last paragraph).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the measuring the first and second scent strengths as taught by Kita in combination Blixt by having a known extracted volatile Thiols that provides a known spectrum of values (see Tominaga, page 161, Fig. 2, (a)-(c)) in order to obtain distinct signature or code to associated scent strength measurements because the volatile compound sprayed on or applied would provide a simplified and distinct identification of the scent strength of a given substance or object with much better characterization or identification method (see Tominaga, page 161, paragraphs 3 and 4).

8. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita (SHIMADZU Article, 'Attempts at Simplified Measurement of Odors in Japan Using Odor Sensors') and Blixt et al. (IJOFM Article, 'Using an Electronic Nose for Determining the Spoilage of Vacuum Packaged Beef', hereon Blixt) further in view of Tominaga et al. (F&F Journal, 'Identification of New Volatile Thiols in the Aroma of Vitis Vinifera L. Var. Sauvignon Blac Wines', hereon Tominaga).

In reference to claims 10 and 11: Kita in combination Blixt teaches a method for determining a method that permits an identification of similarity of measured odor to a pre-measured odor (see Kita, page 145, second and third paragraphs) for identification of spoilage of a vacuum-sealed food, such as meat. The method includes two measured vectors, light components and heavy components corresponds to sensor (A) and sensor (B) respectively. The length of the vectors (see Kita, page 145, Fig. 3 and the second paragraph) indicates defines the sent strength (intensity). The decay rate constant during the measurement associated to each

measurement is relative to the measurement of the odor and is inherent in the measurement process. The current scent ratio or odor quality (as noted in the second paragraph) is calculated as the angle (gradient) between the vectors, and displaying the result a screen since the method also includes a computerized multivariate analysis by a computer (see Kita, page 245, Fig. 4).

However, Kita in combination Blixt does not teach a method of introducing a first and second volatile components to the packaged object and determining whether the impermissible seal is broken based on the reference scent ratio calculated.

Tominaga teaches identification of new volatile Thiols in the aroma of (or scent) by synthesizing a food substance using reagents by selective extraction of volatile Thiols from food substance, such as wine (see Tominaga, page 159, last paragraph).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the measurement of the first and second scent strengths to identify spoilage of a vacuum packaged food as taught in Kita in combination Blixt and incorporating a known extracted volatile Thiols that provides a known spectrum of values (see Tominaga, page 161, Fig. 2, (a)-(c)) in order to obtain distinct signature or code associated with scent strength measurements because the volatile compound sprayed on or applied would provide a simplified and distinct identification of the scent strength of a given substance with much better estimation (see Tominaga, page 161, paragraphs 3 and 4). The value computed from the scent strength ratio or odor intensity gradient would provide information about the condition of the vacuum-sealed food if the gradient were different than the reference value, hence the seal condition would be correlated to the change in the gradient or ratio of the scent strength.

Allowable Subject Matter

9. In reference to claims 2 and 14: The expression that how the age of an object by applying or performing the current scent ratio using the formula noted in claims 2 and 14 is not taught or suggested by any of the references applied to the rejection of the claims noted above or pertinent to the applicants disclosure as noted below. Therefore, claims 2 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hall et al. (U.S. Patent 4,458,093) teaches Hexadienoyl Cyclohexene derivative used to augment or enhance an aroma of an object.
- Blowers et al. (U.S. Patent 7,087,552) teaches modification of floral scent in flowering plants.
- Kennedy et al. (U.S. Patent 6,689,438) teaches oxygen detection system for a solid article. The measurement is made independent of the oxygen concentration of the surrounding atmosphere.
- Enge (U.S. Patent 5,508,515) teaches mass spectrometer, which generally utilizes a system consisting of a negative ion source, mass pre-selector, a tandem electrostatic

accelerator and a final isotope separator. The mass spectrometer is used to determine of the age of an organic material.

- Purser (U.S. Patent 5,118,936) teaches accuracy of AMS isotopic ratio measurements.
- Briggs (U.S. Patent 6,435,002) teaches assessment of the condition of fruit and vegetables.
- Bett et al. (U.S. Patent 5,313,821) teaches uniform and quantitative evaluation of aroma emitting substances.
- Sato et al. (U.S. Patent 5,541,851) teaches method and apparatus for discriminating chemical/physical quantity based on the transient response.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Fri (10:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571)-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Elias Desta
Examiner
Art Unit 2857

- E.D.

- August 17, 2007

 9/26/07
ELISEO RAMOS-FELICIANO
SUPERVISORY PATENT EXAMINER